REMARKS/ARGUMENTS

The subject application contains claims 1-27. In the Office Action dated May 24, 2004, claims 1, 14 and 15 were rejected on formal grounds under 35 U.S.C. §112, second paragraph; claims 1, 2, 4, 9, 10, 12-16, 18 23, 24, 26 and 27 were rejected under 35 U.S.C. §102(b) as being anticipated by Moore (US Patent 4,969,947); claims 1, 2, 9-16 and 23-27 were rejected under 35 U.S.C. §102(b) as being anticipated by Wolstenholme et al (EP Published Application 0731067); and claims 1-7, 9-21 and 23-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tijsma et al 993505 (sic) and Wolstenholme et al. Claims 8 and 22 were objected to but were not rejected over cited prior art references.

Initially, it is noted that in accordance with a telephone call to the Examiner on August 16, 2004, applicants' counsel confirmed that the number of the cited Tijsma et al reference was mistyped in the Office Action and the correct identification of this reference should be US patent 5,993,505. Accordingly, applicants' reply is based on consideration of the relevance of such Tijsma et al patent.

35 U.S.C. §112 Rejection

With regard to the rejection of Claims 1, 14 and 15 under 35 U.S.C. §112, second paragraph, as being indefinite, applicants have amended each of these claims and, as amended, it is believed that the Examiner's objections have been overcome.

Specifically, applicants have amended claims 1 and 15 to include a definition of the abbreviation "WVTR" as required by the Examiner. Claim 14 has been amended to include a period as required by the Examiner.

In view of these amendments introduced herein, it is believed that the Examiner's objections to Claims 1, 14 and 15 under 35 U.S.C. §112, second paragraph, have been overcome. Accordingly, reconsideration and withdrawal of this ground for rejection is respectfully requested.

Claim Objections

As previously noted, in the Office Action, claims 8 and 22 were objected to but were not rejected over cited prior art references. Accordingly, it is believed that these both of these claims would be in condition for allowance if they were amended from their original dependent form into independent claims. In view of the amendments submitted herewith, claims 8 and 22 are now presented in independent form and applicants respectfully request reconsideration and allowance of these claims.

35 U.S.C. §102(b) Rejections

In the Office Action, claims 1, 2, 4, 9, 10, 12-16, 18 23, 24, 26 and 27 were rejected under 35 U.S.C. §102(b) as being anticipated by Moore (US Patent 4,969,947) and claims 1, 2, 9-16 and 23-27 were rejected under 35 U.S.C. §102(b) as being anticipated by Wolstenholme et al (EP Published Application 0731067).

Applicants submit that these grounds for rejection are not well taken and, upon reconsideration, should be withdrawn. Specifically, it should be noted that all of the claims in the present application require that a single semi-permeable coating layer be applied directly onto the surface of a particulate core material for purposes of controlling the release rate of the core material so that initial release of core material from the coated

product is suppressed such that less than 15 weight percent of core material is released from the coated product within a 24 hour period after application of the coated product and longevity of release between the time of application and the time at which at least 75 weight percent of the core material is released from the coated product is 60 days or less at ambient temperature of about 21° C. In order to accomplish these unique release characteristics, the claims specifically require that the single semi-permeable coating layer must be formed from a polymer or resin which forms a uniform continuous polymeric film and has a critical water vapor transmission rate (WVTR) of greater than 800 g.μm/m^2.day.

With regard to the rejection of the present claims having the above described critical limitations therein, it should be noted that the Moore (US Patent 4,969,947) reference, for example, does not disclose, teach or suggest the use of a polymeric coating layer having the critical WVTR of the present invention nor does it disclose, teach or suggest the longevity of release standard of at least 75 weight percent of the core material is released from the coated product is 60 days or less at an ambient temperature of about 21° C. as disclosed and claimed herein.

Contrary to the Examiner's unsupported assumption that a "straight line" release pattern would be demonstrated by the formulations described in the Moore (US Patent 4,969,947), it should be noted that Moore teaches at col 8, lines 44-47 that a fertilizers as described therein "would release its nitrogen slowly over an extended period of time."

Thus, one skilled in the art would not assume that the Moore compositions would necessarily release at least 75 weight percent of the core material in 60 days or less and, more likely, would be led to expect the release period to extend over a greater duration. Certainly, the Moore petent would not teach one skilled in the art that the release of at least 75 weight percent of the core material would release in 60 days or less a t an ambient temperature of about 21° C. Thus, it is clear that the Moore reference is, at least, ambiguous as to the duration of release and, clearly, would not anticipate the present invention which employs a polymeric coating layer having a critical WVTR of greater than 800 g.μm/m^2.day to achieve a longevity of release of at least 75 weight percent of the core material within 60 days or less at ambient temperature of about 21° C after an initial release of less than less than 15 weight percent of the core material at such ambient temperature within a 24 hour period after application.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) based on Moore (US Patent 4,969,947) is respectfully requested.

With regard to the rejection of the present claims under 35 U.S.C. §102(b) as being anticipated by Wolstenholme et al (EP Published Application 0731067), it should be noted that Wolstenholme et al reference, for example, does not disclose, teach or suggest the use of a single polymeric coating layer having the critical WVTR of the present invention nor does it disclose, teach or suggest an initial release of less than 15 weight percent of the core material within a 24 hour period after application at an ambient temperature of about 21° C.

Specifically, it should be noted that contrary to the Examiner's allegations, Wolstenholme et al do not employ a "one layer" coating on their fertilizer granules. In this regard, the Examiner's attention is directed to page 3, lines 1-10 of Wolstenholme et al wherein it is taught that:

"The final coating consisted of several discrete layers , each layer corresponding 0.5 wt. % of polyurethane on each granule...." (Emphasis added).

Furthermore, it should be noted that with regard to the release characteristics exhibited by the thick coated fertilizer sample selected by the Examiner from Figure 1 in the Wolstenholme et al reference, the release pattern of that composition was measured at an ambient temperature of 15°C, not 21°C as disclosed and claimed herein. In fact, the initial release rate for this selected thick coated composition is illustrated as being only slightly less than 15% in the first 24 hours at the 15°C ambient temperature. However, as illustrated in Figure 2 in the Wolstenholme et al reference, the initial release rate for same thick coated composition from Figure 1 is shown as being over 20% in the first 24 hours at an ambient temperature of 23°C.

On this basis, it should be clear that if the initial release rate of the thick coated product of the Wolstenholme et al referenced by the Examiner had been measured at the 21°C ambient temperature disclosed and claimed herein, the initial release rate of such product would have significantly exceeded the herein claimed upper limit of 15 weight percent in the first 24 hours after application.

Still further, it should be noted that the thin coated composition taught by Wolstenholme et al, as illustrated in Figures 1 and 2 therein, were shown to have an initial release rate under both the 15°C and the 23°C ambient temperature conditions which significantly exceeded the 15 weight percent release rate disclosed and claimed herein. This fact further demonstrates that the products of the Wolstenholme et al reference would not achieve the same release characteristics as the compositions of the present invention and that the Wolstenholme et al reference which does not disclose, teach or suggest the critical WVTR value of the polymeric coating would not anticipate the present invention which relies on such WVTR of the coating to accomplish the unique release rate characteristics.

Thus, applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) based on the Wolstenholme et al (EP Published Application 0731067).

In view of the foregoing, applicants believe that it has been conclusively demonstrated that the present claims patentably distinguish over both the Moore and the Wolstenholme et al references and reconsideration and withdrawal of the rejections based on these references are respectfully solicited.

35 U.S.C. §103(a) Rejection

In the Office Action, claims 1-7, 9-21 and 23-27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tijsma et al (US Patent 5,993,505) and Wolstenholme et al.

Applicants respectfully submit that this ground for rejection is not well taken and upon reconsideration should be withdrawn. Specifically, as previously noted herein, Wolstenholme et al reference, for example, does not disclose, teach or suggest the use of a single polymeric coating layer having the critical WVTR of the present invention nor does it disclose, teach or suggest an initial release of less than less than 15 weight percent of the core material within a 24 hour period after application at an ambient temperature of about 21° C.

Concerning the Tijsma et al reference, it should initially be noted that this patent having common inventorship with the present application and being commonly assigned herewith, discloses the use of substantially smooth core materials coated with a single coating layer to achieve a reduced initial rate of release of the fertilizer core. Tijsma et al does not disclose, teach or suggest that the WVTR characteristics of the coatings applied on a fertilizer core will enable or, indeed, will have any effect whatsoever on the release properties of the fertilizer compositions. In particular, Tijsma et al does not disclose, teach or suggest that the selection of the proper polymeric coating to apply on a fertilizer core will enable the herein disclosed and claimed release rate combination of low initial 24-hour release followed by release of at least 75 weight percent within a period of 60 days or less.

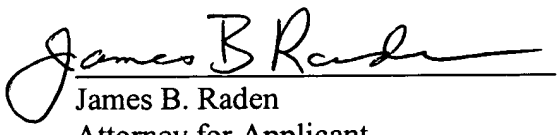
Accordingly, in the absence of impermissible hindsight reconstruction of applicants' invention, it is submitted that the Tijsma et al and the Wolstenholme et al references, taken singly or in combination, would not render the presently claimed invention obvious under 35 U.S.C. §103(a). Thus, reconsideration and withdrawal of this ground for rejection is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that this application containing claims 1-27 is now in condition for allowance and such action is respectfully solicited.

Enclosed is a check in the amount of $86.00 covering the fee for inclusion of the additional independent claims which now number more than the 3 for which payment was previously made. It is believed that no further charges or fees must be paid in connection with this reply. However, if any such charges or fees are due, the Assistant Commissioner is hereby authorized to charge our Deposit Account No. 10-1202.

Respectfully submitted,



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